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(54) **SERVICE CABLE BOX**

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See application file for complete search history.

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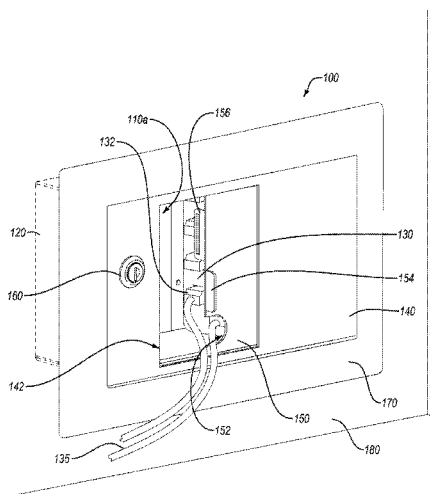
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ABSTRACT

Cables boxes and cable distribution systems securely store and route network cables of different types and/or security classifications. More specifically, a service cable box can include one or more chambers that can secure secondary network cables of one or more types and/or classifications. The service cable box can have secure and unsecure connection chambers. Accordingly, the service cable box can segregate network connections of different types and/or security classifications and can selectively provide secured access thereto.

25 Claims, 8 Drawing Sheets



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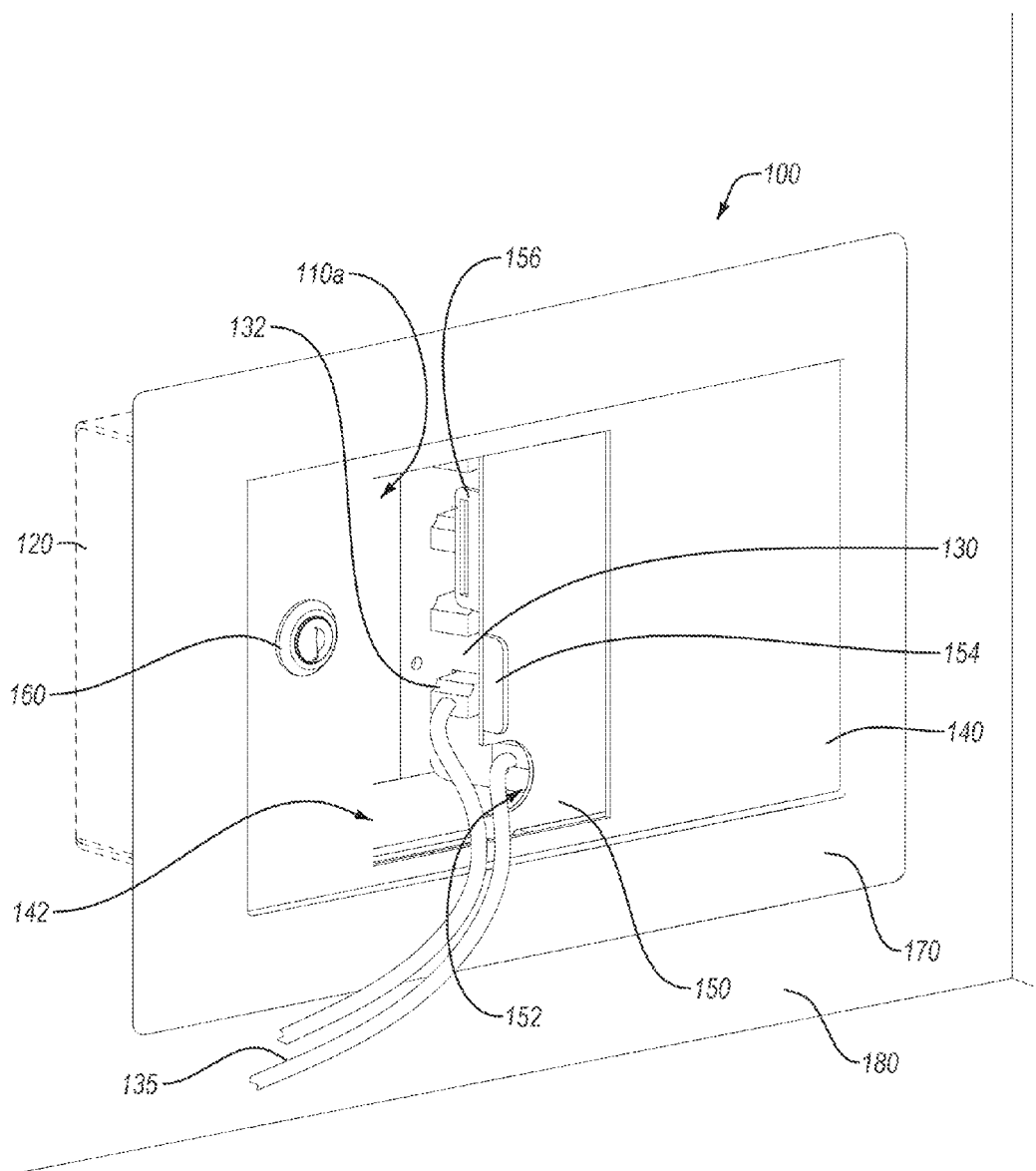
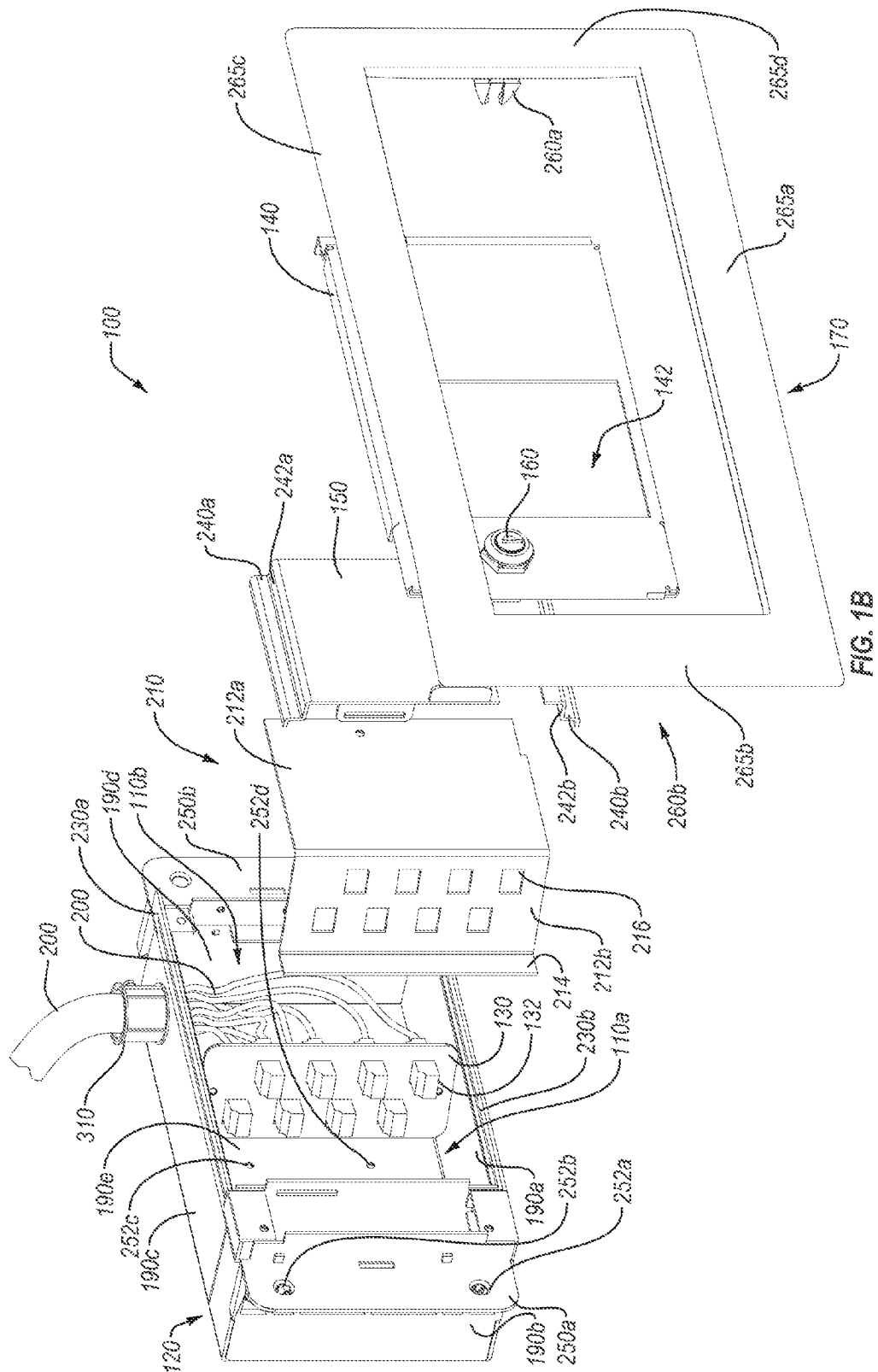


FIG. 1A



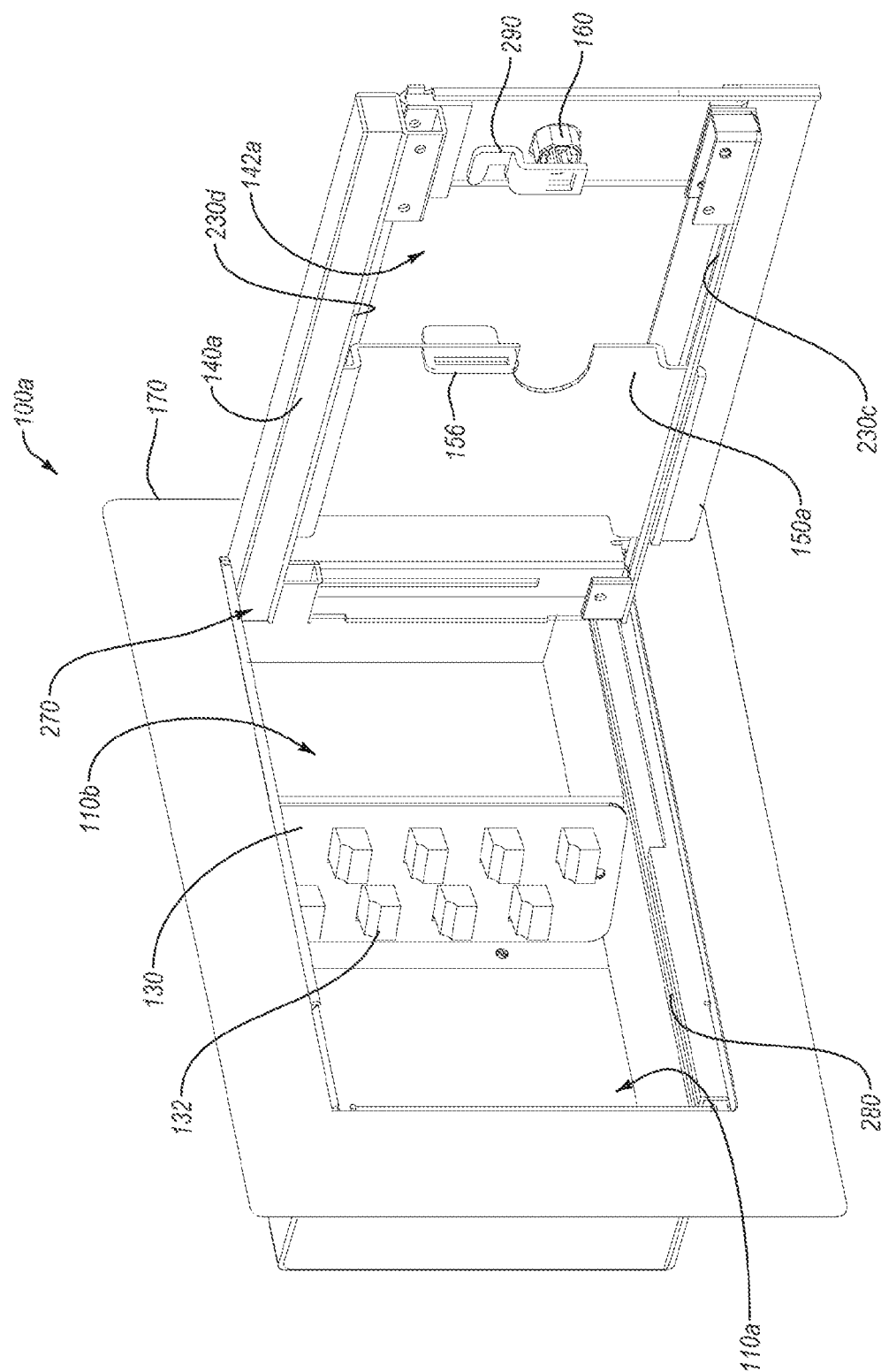


FIG. 1C

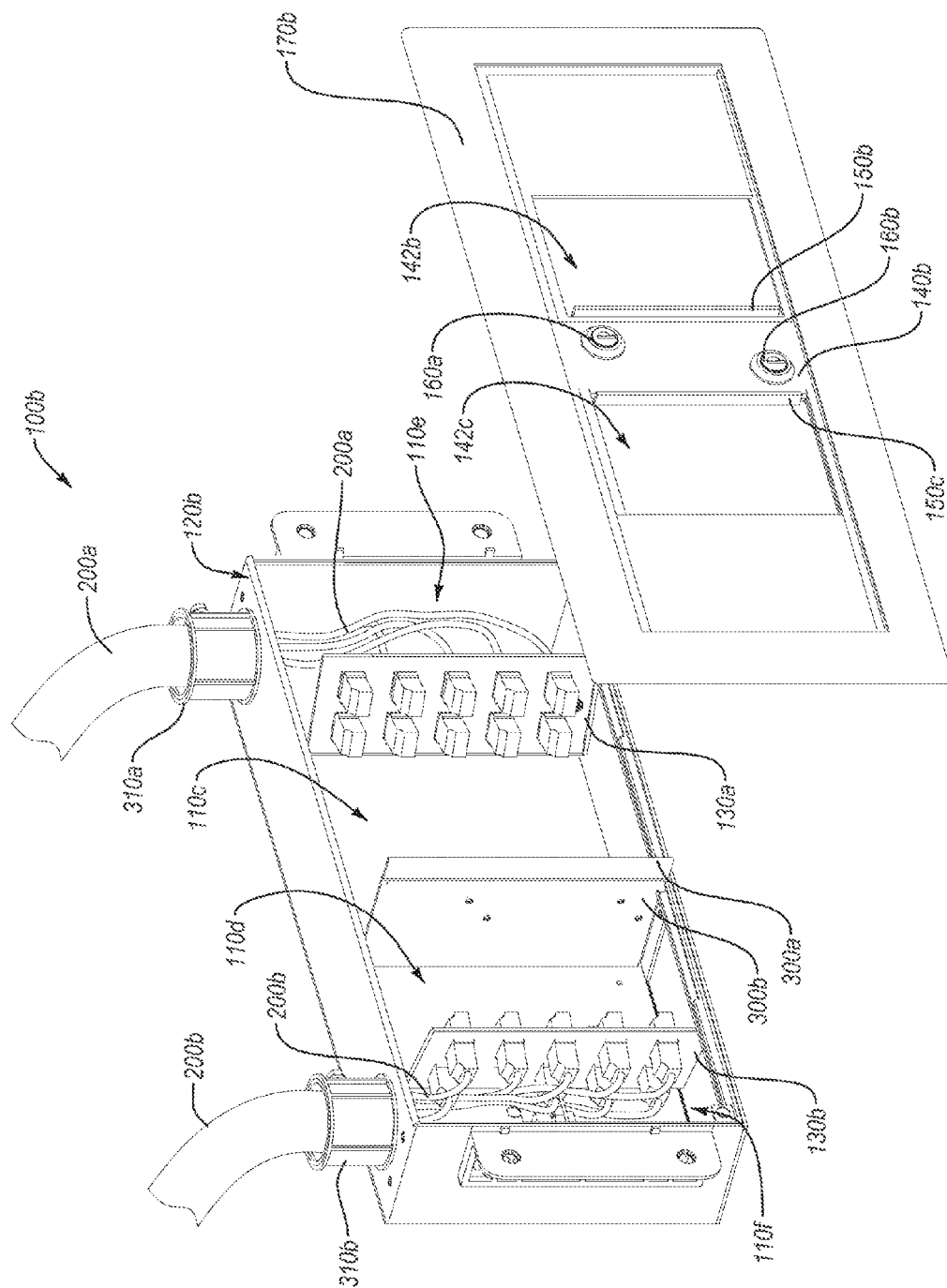
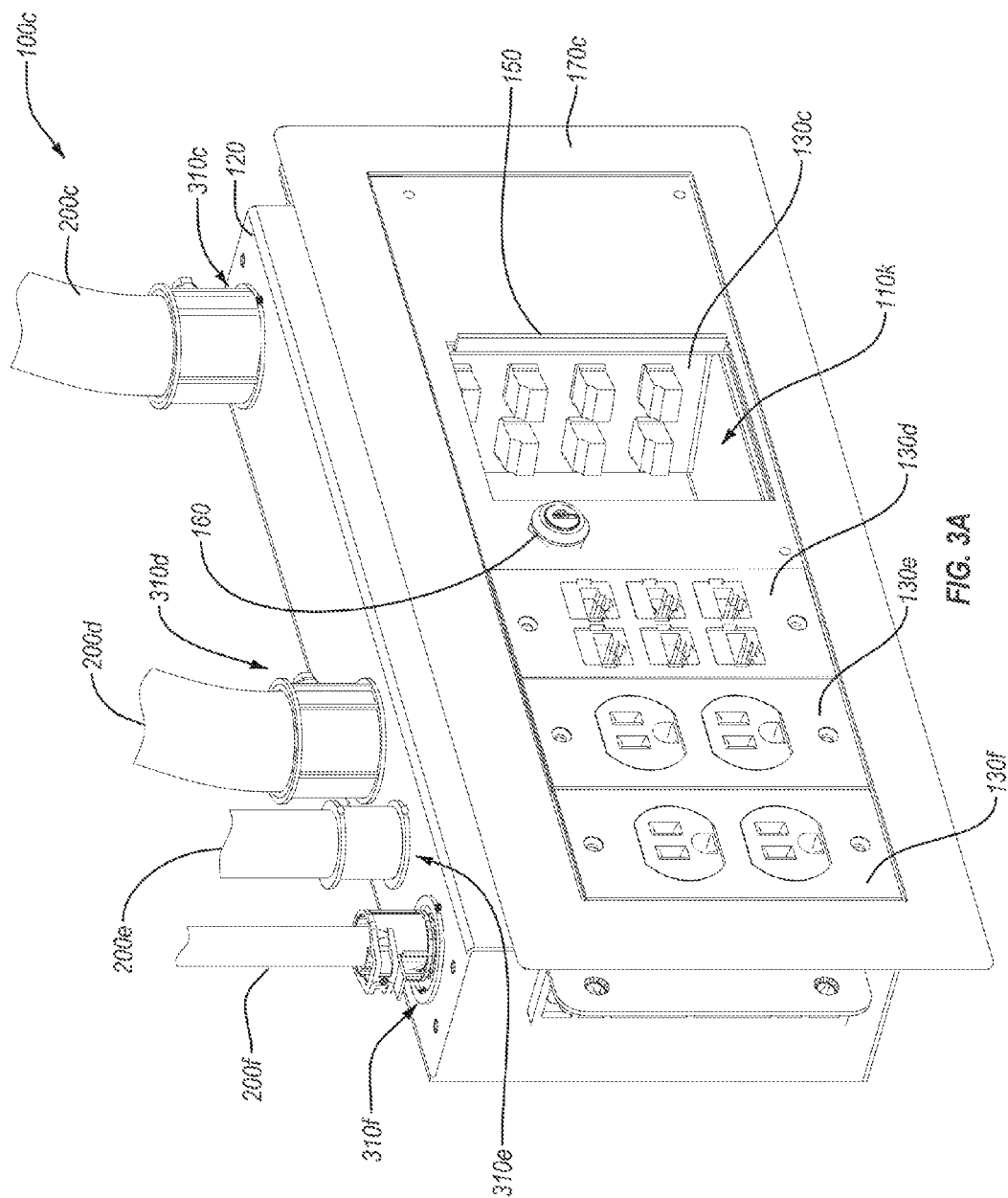


FIG. 2



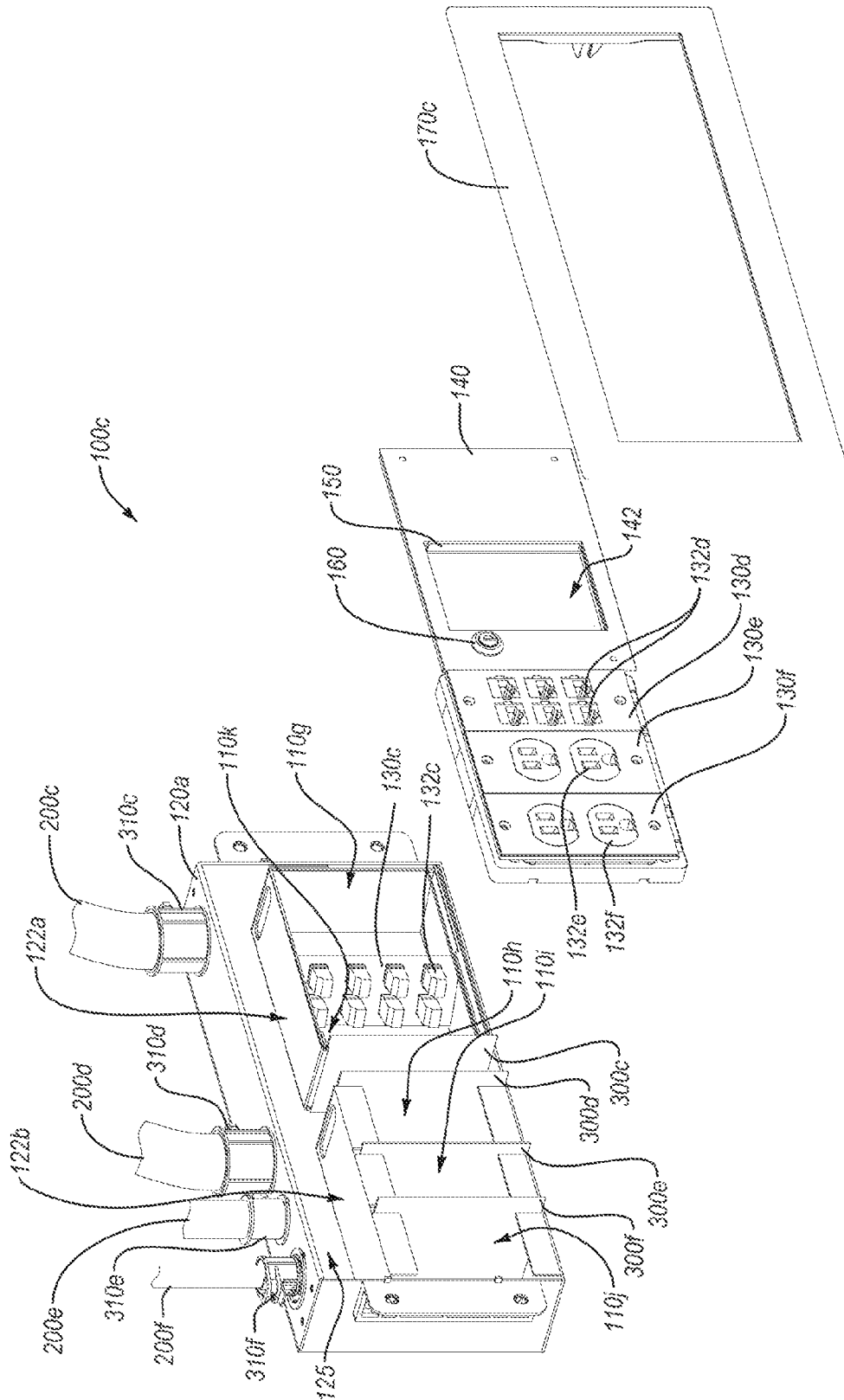
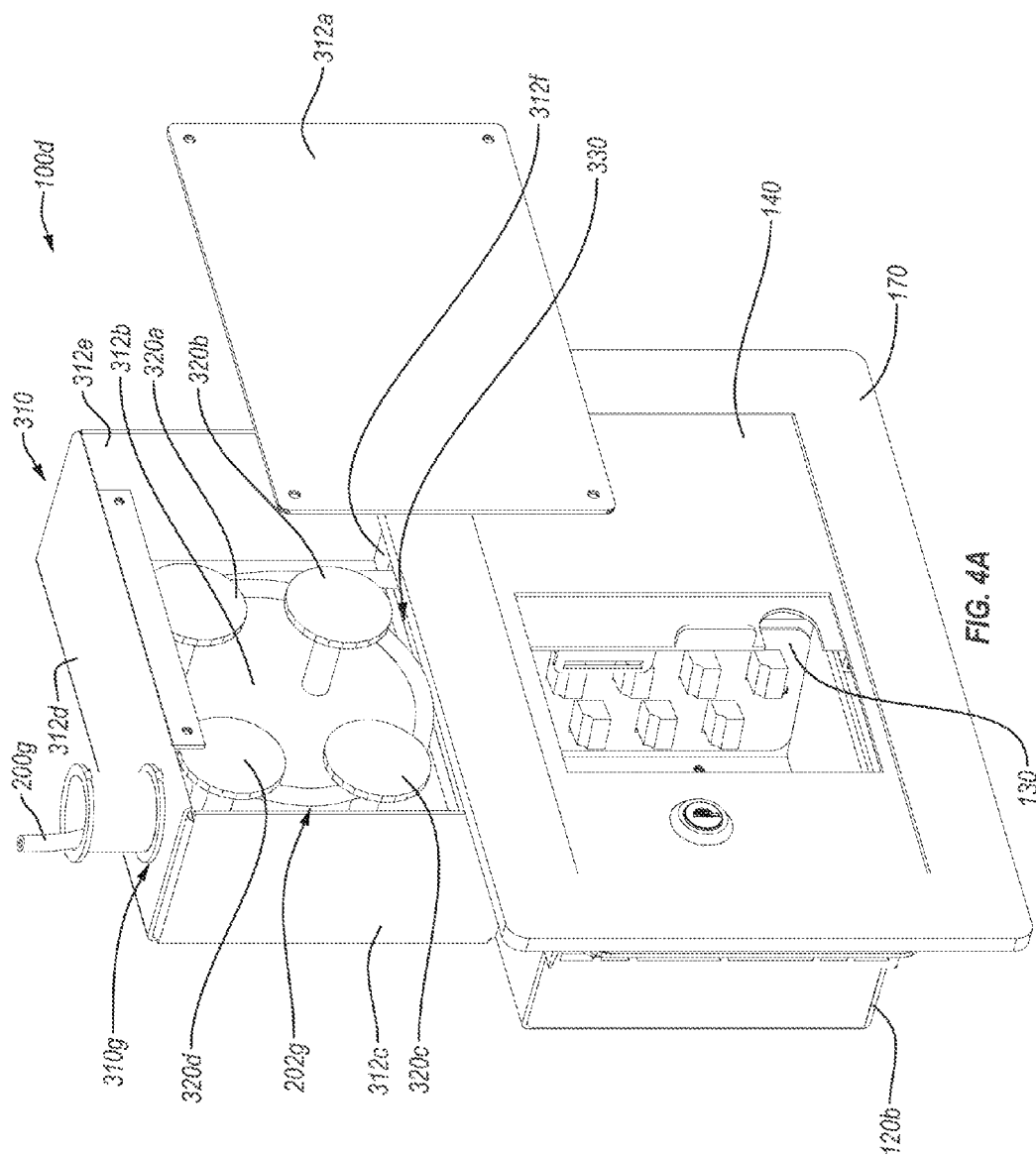
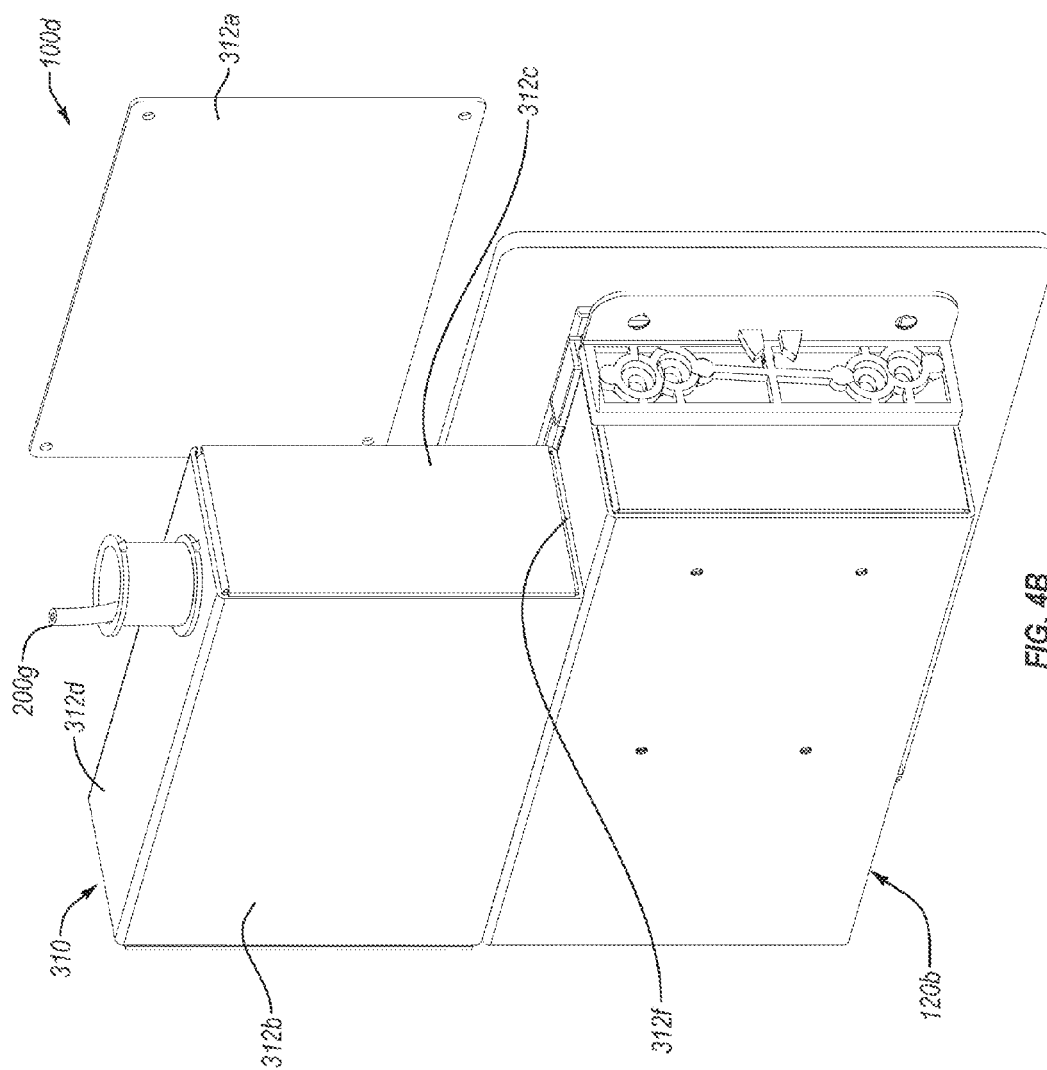


FIG. 3B





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SERVICE CABLE BOX**CROSS-REFERENCE TO RELATED APPLICATIONS**

The present invention is a 35 U.S.C. §371 U.S. National Stage of PCT Application No. PCT/US2012/065920 filed Nov. 19, 2012, entitled, "Service Cable Box," which claims the benefit of priority to U.S. Provisional Application No. 61/570,714, filed Dec. 14, 2011, entitled "Secure Wall Cable Box." The entire content of each of the aforementioned patent applications is incorporated herein by reference.

BACKGROUND OF THE INVENTION**1. The Field of the Invention**

This invention relates to systems, methods, and apparatus for securing network cabling and/or network or electrical connections at a network endpoint.

2. Background and Relevant Art

Security concerns in data and communication infrastructures have increased in importance as more individuals, businesses, government, and military organizations increase reliance on data and communication networks. As an example, both government and military agencies often require physical security standards for sensitive information facilities, such as the DCID 6/9 and NSTISSI standards (both of these standards are herein incorporated by reference in their entirety). Providing secure cabling and cabling connections, is often an important part securing data and a network infrastructure.

Communication devices, such as computers, telephones, fax machines and other devices, often receive and transmit information through cables. For instance, fiber optic cables, copper cables, and other communication cables may carry information to and from the communication devices. Cable boxes are often connection points that organize the cables within a communication network. Many office buildings have at least one cable box, such as between the point at which a data cable enters a building and the point at which a data cable terminates at a communication device.

Cable boxes can include, for example, consolidation boxes and service cable boxes. An installer or a network architect can position the consolidation boxes in a ceiling, floor, or inside a wall. Consolidation boxes can provide network access and service to many different end users. Cable bundles, also known as "trunk lines" and "primary cables," can contain many individual cable strands. Cable bundles may enter into the consolidation box and can separate into smaller bundles or individual cables and proceed to several different service cable boxes. Smaller bundles or individual cables are also known as "branch lines" and "secondary network cables."

Unlike most consolidation boxes, service cable boxes may service a single end user or a small number of end users. Secondary network cables from a consolidation box may enter a service cable box through a designated entry port and connect to a connector module. Connector modules can connect to the ends of the secondary network cables. The connector modules may contain one or more connectors, such as network ports. A service network cable connected directly to a communication device can have a cable plug on an open end, which can couple to the connector on the connector module.

Typically, in order to maintain security, conventional cable boxes (including both consolidation boxes and service boxes) have a capability to accept only one type of classified network. Thus, a facility with several different classified net-

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works may need separate cable boxes for each classified network. In such situations, the network architect can install multiple cable boxes in order to maintain security. Depending on the design of a particular facility, accommodating separate cable boxes for each network can be difficult or impossible.

Furthermore, conventional network systems often include both power/electrical cables and data cables. Unfortunately, including both data boxes and power or electrical boxes may increase installation and maintenance costs. Additionally, multiple different types of boxes can limit the availability of interior space for accommodating other components.

Accordingly, there are a number of disadvantages with conventional service cable boxes that can be addressed.

BRIEF SUMMARY OF THE INVENTION

Implementations of the present invention overcome one or more of the foregoing or other problems in the art with systems and apparatus for securing and routing cables. In particular, one or more systems and apparatus provided herein include a service cable box that securely houses and allows efficient routing of cables. For instance, in one or more implementations the service cable box can include one or more chambers that organize, route, and secure cables. Additionally, the service cable box can include one or more securable doors, which can restrict access to the cables, for example, based on a user's clearance.

For example, an implementation of a service box includes a housing, a first connection chamber located within the housing, and a second connection chamber located within the housing. The service box further includes a connector module separating the first connection chamber from the first second connection chamber. The service box also includes a barrier plate coupled to the housing. The barrier plate has an opening. The barrier plate is sized and configured to at least partially cover the first connection chamber and to prevent access thereto. Additionally, the service box includes a door coupled to one or more of the housing and the barrier plate. The door is configured to slide open and selectively provide access to the second connection chamber through the opening in the front barrier plate. The service box also includes a lock configured to selectively lock the door relative to the barrier plate.

Another implementation of a service cable box includes a housing configured to be mounted within a wall. A connection chamber is disposed within the housing. The connection chamber is configured to physically secure secondary network cables. A front barrier plate is coupled to the housing. The front barrier plate includes at least one opening configured to provide access to the connection chamber. The front barrier plate is configured to extend substantially parallel to the wall. The service cable box further includes a connector module located in the connection chamber. One or more of the front barrier plate or a face plate is configured to abut the wall when the service cable box is installed in the wall. The connector module has a non-parallel orientation with respect to one or more of the front barrier plate or the face plate. Additionally, the connector module is configured to be recessed within the wall.

In addition to the foregoing, a network cable distribution system includes one or more data or communication secondary network cables, an electrical secondary network cable, and a service cable box. Each of the cables and the service cable box are mounted within an interior space of one or more of a ceiling, a floor, or a wall. The service cable box includes a plurality of connection chambers within a unitary housing. The plurality of connection chambers accept and secure the one or more data or communication secondary network cable

and the electrical secondary network cable. The service cable box further includes one or more lockable doors that selectively seal one or more connection chambers of the plurality of connection chambers within the service cable box.

Additional features and advantages of exemplary implementations of the invention will be set forth in the description which follows, and in part will be obvious from the description, or may be learned by the practice of such exemplary implementations. The features and advantages of such implementations may be realized and obtained by means of the instruments and combinations particularly pointed out in the appended claims. These and other features will become more fully apparent from the following description and appended claims, or may be learned by the practice of such exemplary implementations as set forth hereinafter.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to describe the manner in which the above-recited and other advantages and features of the invention can be obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. For better understanding, the like elements have been designated by like reference numbers throughout the various accompanying figures. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered to be limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

FIG. 1A illustrates a perspective view of a service cable box installed in a wall in accordance with an implementation of the present invention;

FIG. 1B illustrates an exploded perspective view of the service cable box of FIG. 1A;

FIG. 1C illustrates a perspective view of another service cable box in accordance with an implementation of the present invention;

FIG. 2 illustrates a partially exploded perspective view of yet another service cable box in accordance with an implementation of the present invention;

FIG. 3A illustrates a perspective view of still another service cable box in accordance with an implementation of the present invention;

FIG. 3B illustrates an exploded perspective view of the service cable box of FIG. 3A;

FIG. 4A illustrates a partially exploded front perspective view of another service cable box in accordance with an implementation of the present invention; and

FIG. 4B illustrates a back perspective view of the service cable box of FIG. 4A.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Implementations of the present invention include systems and apparatus for securing and routing cables. In particular, one or more systems and apparatus provided herein include a service cable box that securely houses and allows efficient routing of cables. For instance, in one or more implementations the service cable box can include one or more chambers that organize, route, and secure cables. Additionally, the service cable box can include one or more securable doors, which can restrict access to the cables, for example, based on a user's clearance.

More specifically, one or more implementations of a service cable box can secure certain network cables and/or connectors within secure connection chambers. The lockable doors can selectively close off the connection chambers. For example, a first lockable door may limit access for connecting to a network of a first security classification, while a second lockable door may limit access to connecting to a network having a second security classification. Furthermore, in one or more configurations, the service cable box also can include unsecure connection chambers, which can provide unlimited access (e.g., without a lockable door) to one or more networks.

Hence, in one or more implementations a service cable box can accept and secure network cable from networks having distinct security classifications (e.g., unclassified, sensitive, restricted, confidential, secret, top secret). In particular, the service cable box can segregate the secondary network cables of a first security classification from the secondary network cables of the second security classification. Moreover, the service cable box can limit access to the network cables and/or network connectors based at least in part on the security classifications of such network cables.

Consequently, as will be understood more fully in light of disclosure below, one or more implementations of the present invention provide one or more devices, systems, and/or components that make it possible to secure network cables with distinct security classifications within the same service cable box. As used herein, generally, a cable box can include any box, panel, outlet, or container that can serve as a point of connection, distribution, or junction within a data and communication network and/or electrical power infrastructure. Cable boxes can include both consolidation boxes that are configured to serve multiple end users and service boxes that are configured to serve a single or limited number of end users. In at least one implementation, the service cable box can receive and secure one or more cables from other cable boxes. As used herein, "cable" refers to any cable, wire, chord, or line that can be used as a communication or electrical transfer medium. For example, communications cables include Ethernet, fiber optic, electrical, copper wire, telephone or any other communication or electrical cables of any form or standard.

In general, however, service cable boxes can accept and secure network cables from one or more portions of a power network, electrical network, communication/data network, and combinations thereof (hereinafter "networks"). As used herein, "network cables" refer to any cable, wire, cord, or line that can be used as a communication medium or electrical transfer medium for a network (e.g., a data network, a communication network, power network, electrical network etc.). Network cables include Ethernet, fiber optic, telephone, power, copper, or any other communication or cable in any form or standard.

The physical location of a service cable box can vary from one implementation to the next. For example, a network architect can provide a network architecture that positions the service box in an interior space between raised floors, suspended ceilings, or within walls. In one or more implementations, a network architect can cover the service box with a removable floor, ceiling or wall panel, which may hide the service cable box from plain view. In other implementations, the service cable box remains unconcealed (e.g., mounted in the floor, ceiling, or wall).

According to at least one implementation, the service cable box can protect and safely route service network cables out of one or more connection chambers. Particularly, when installed within the floor, ceiling, or wall, the service cable

box can have a recessed connection chamber and a recessed connector module. The connector module can include multiple network connectors (e.g., data ports, electrical outlets, etc.). Furthermore, in one or more implementations the connector module can extend at approximately 90° with respect to the wall (or other mounting surface). Moreover, the connector module alternatively may have another non-parallel orientation with respect to the wall (i.e., form acute or obtuse angles), such that the service network cables connected to the network connectors exit in a non-perpendicular orientation to the wall.

In one or more implementations, a network architect can position the service cable box within a wall proximate to a communication device or an end user's workstation. The network architect can run individual cables from the service cable box (i.e., from the network connectors within the service cable box) directly to communication devices at the workstation. Thus, the service cable box can provide convenient and local access to the communications network connection for the communication device.

As described above, in one or more implementations the service cable box also can provide access to connectors from two or more networks of different types and/or security classification levels. For example, the installer can form a network system that incorporates multiple types and/or security classification networks routed to and/or distributed at a single endpoint (i.e., at the service cable box). Accordingly, the service cable box that can provide access (which may be restricted) to multiple network connectors of different types and/or security classifications. Such network connectors can accept service network cables that may connect individual devices, such as telephones, fax machines, computers, servers, etc., to corresponding networks.

For example, FIG. 1A illustrates a service cable box **100** can include a service connection chamber **110a** disposed within a housing **120**. Within the service connection chamber **110a**, the service cable box **100** can receive and secure secondary network cables. Such secondary network cables can connect to a connector module **130**, which can connect such secondary network cables to one or more network connectors **132**. The user can access the network connectors **132** in the service connection chamber **110a** (which may be a secure or an unsecure connection chamber).

Particularly, the user can couple the service network cables **135** to the network connectors **132**. Thus, within the service connection chamber **110a**, the service cable box **100** can receive and secure one or more network service cables **135**. As noted above, the network service cables **135** can connect various individual devices to the networks.

In one or more implementations, the service cable box **100** includes a front barrier plate **140**, which can restrict access to the secondary network cables, the network connectors **132**, and/or the connector module **130** located within the service cable box **100**. The barrier plate **140** can couple to the housing **120**, such that a portion of the barrier plate **140** can prevent access to the secondary network cables located within the service cable box **100**. Particularly, the barrier plate **140** restricts access to at least one connection chamber (e.g., secondary connection chamber) that houses and/or secures the secondary network cables.

The barrier plate **140** also can facilitate access to the service connection chamber **110a** and, consequently, to the connector module **130**. For example, in at least one implementation, the barrier plate **140** includes an opening **142**, which can provide access to the service connection chamber **110a**. Additionally or alternatively, the barrier plate **140** can include

multiple openings, one or more of which may allow the user to access at least a portion of the service connection chamber **110a**.

As described above, the barrier plate **140** can cover and prevent access to at least one connection chamber. For example, the barrier plate **140** can form a permanent coupling with the housing **120**. For instance, a manufacturer can rivet, weld, and/or screw the barrier plate **140** to the housing **120**. In any event, housing **120** can fasten or couple to the barrier plate **140**, such that the barrier plate **140** is immovable with respect to the housing **120**. Accordingly, network cables located in the connection chambers covered by the barrier plate **140** may not be accessible to the users.

Hence, according to at least one implementation, the user can access the network connectors **132** through the opening **142** in the barrier plate **140**. In some instances, however, access to the network connectors **132** may be restricted. Specifically, in the implementation illustrated in FIG. 1A, the service cable box **100** includes a door **150** (shown in a partially closed position). The door **150** can slide with respect to the barrier plate **140**, thereby covering (when the door **150** is in the closed position) and uncovering (when the door **150** is in an open position) the opening **142**. In particular, the user can slide the door **150** in one direction to uncover the opening **142** and provide to access the service connection chamber **110a**. Conversely, the user can slide the door **150** in an opposite direction to cover the opening **142** and to block access to the service connection chamber **110a** through the opening **142**.

Thus, with the door **150** in the open position, the user can connect and/or disconnect service network cables **135** to/from the network connectors **132**. After connecting and/or disconnecting the service network cables **135** to/from the network connectors **132**, the user can slide the door **150** into the closed position, which may prevent unauthorized access to the service connection chamber **110a** and, consequently, to the network connectors **132**. The door **150** also may include a notch **152** that can facilitate the service network cables **135** exiting the service connection chamber **110a**. The user also can utilize the notch **152** to slide the door **150** into the open position. In addition or alternatively to the notch **152**, the door **150** also may include a tab **154** that the user can utilize to slide the door **150** into the open and/or closed positions.

Additionally or alternatively, in one or more other implementations, the service cable box **100** can include multiple doors (similar to the door **150**). For instance, multiple doors may cover and uncover the opening **142**, thereby blocking and allowing access, respectively, to the service connection chamber **110a**. Furthermore, the door(s) **150** can have a hinged configuration, which may allow the user to swing the door **150** open and closed to respectively uncover and cover the opening **142**. In yet at least one other implementation, the service cable box **100** may have no doors covering the opening **142** (i.e., for an unsecure service connection chamber **110a**). Accordingly, the service cable box **100** may allow unrestricted access to the service connection chamber **110a** and, consequently, to the networks connectors **132**.

In the implementations where the service cable box **100** incorporates at least one door, such as the door **150**, the service cable box **100** also can include a lock **160**, which can secure the door **150** in the closed position. For instance, the door **150** can include a slotted tab **156**, which can accept a locking element of the lock **160**. More specifically, the slotted tab **156** can accept a hook that can secure or lock the door **150** with respect to the barrier plate **140** and/or housing **120**,

thereby preventing unauthorized users from accessing the service connection chamber **110a** (and the connector module **130**).

Furthermore, the type of lock **160** can vary from one implementation to the next. For example, the lock **160** can be a keyed lock that is opened with a key (not shown). Other locks lock **160** can include electromagnetic locks, electric locks, combination locks, touchpad locks, magnetic locks, or any other type of locking device that can securely lock the door **150** in the closed position.

As noted above, the service cable box **100** can accept secondary network cables from one or more networks. Moreover, such networks can have various security classifications, including security classifications that may require restricting access to such networks. Thus, in one or more implementations, the service cable box **100** provides restricted access to the service connection chamber **110a** (and to the network connectors **132**) and, therefore, to such networks. In other words, the service connection chamber **110a** may be a secure connection chamber. The network administrator can provide authorized users with keys that can open the lock **160**, and only the authorized users may be able to open the door **150** to access the service connection chamber **110a**.

In one implementation, the service cable box **100** includes an alarm within the secured chamber (e.g., the service connection chamber **110a**) to detect when the door **150** is opened. Such alarm can be dry contact buttons alarm, which detect opening of the door **150**. In light of this disclosure, those of skill in the art will recognize that other electric and mechanical sensors can be used to activate an alarm in accordance with the present invention. With an alarm installed, authorized individuals that need to open the doors and access a secure chamber may need to schedule interruptions or deactivations of the alarm, before accessing the secure chamber. For example, the alarm may be deactivated using a password or code.

Triggering the alarm can elicit different responses. For example, the alarm can send a message to security personnel who can further investigate whether an authorized user is accessing the secured chamber. In another embodiment, an audible siren or flashing lights can be activated when the alarm is triggered.

The service cable box **100** also can include a face plate **170**, which can conceal rough edges of an opening in the wall **180** (or other mounting surface). More specifically, the face plate **170** may be flush with the wall **180**, such as to create an aesthetically pleasing appearance of the service cable box **100**. Furthermore, in at least one implementation, the service cable box **100** is recessed within the wall **180**. Particularly, the service cable box **100** can have the housing **120** and one or more connection chambers, such as the service connection chamber **110a** recessed within the wall **180**. Moreover, the connector module **130** also may be recessed within the wall **180**.

In one or more implementations, as mentioned above, the connector module **130** can have a non-parallel orientation with respect to the wall **180**. For example, as shown in FIG. 1A, the connector module **130** can have a substantially perpendicular orientation with respect to the wall **180**. Alternatively, the connector module **130** can have other non-parallel orientations, such as forming acute or obtuse angles with respect to the wall **180**.

In other words, the network connectors **132** can face in a direction that is not perpendicular to the surface of the wall **180** housing the service cable box **100**. In any event, the service network cables **135** connected to the network connectors **132** can connect to the connector module **130** and/or exit

the service connection chamber **110a** at a non-perpendicular angle with respect to the wall **180**, as shown by FIG. 1A. Such orientation of the connector module **130** within the wall **180** (where the connector module is so recessed and oriented) can allow the installer to run service network cables **135** substantially along the surface of the wall **180**, without significant bending thereof.

Certain types of network cables, such as fiber optic cables, may not easily (or at all) bend beyond a minimal radius. Accordingly, the above-described configuration can allow the installer to run the fiber optic secondary network cables **135** along the wall **180**, while maintaining the minimal radius. Furthermore, recessed and angled network connectors **132** can have greater protection from accidental impact from passersby and/or from equipment. More specifically, the network connectors **132** can remain protected within the service connection chamber **110a**.

Additionally, angled connector modules **130** can provide ease of use, which includes a convenient viewing angle, connection angle, and the ability to easily label the connection panel. For instance, the service connection chamber **110a** can include modular cassettes, jacks, and/or other connector modules **130** that are pre-fabricated, and which may have matching colors and/or keyed connectors to minimize installation time and connection errors.

Referring now to the FIG. 1B, which illustrates additional details of the service cable box **100**. More specifically, the housing **120**, which contains connection chambers, can have one or more sidewalls such as sidewalls **190a**, **190b**, **190c**, **190d**, and a back wall **190e**, which define the housing **120**. Additionally, such sidewalls **190a**, **190b**, **190c**, **190d**, and back wall **190e** can be substantially flat, arcuate, or can have an irregular shape. The sidewalls **190a**, **190b**, **190c**, **190d** also can form various angles with respect to one another. Similarly, the sidewalls **190a**, **190b**, **190c**, **190d** can form various angles with respect to the back wall **190e**.

For instance, sidewalls **190a** and **190b** can form a substantially 90° angle with respect to each other. Those skilled in the art, however, should appreciate that sidewalls **190a**, **190b**, **190c**, **190d**, and the back wall **190e** can have different shapes and can form different angles with respect to one another. Accordingly, the housing **120** also can have various shapes. For instance, the housing **120** can have substantially rectangular shape. Alternatively, the housing **120** can have cylindrical or other shapes.

In one implementation, the housing **120** is made from a strong metal, such as stainless steel or other materials with similar properties. For instance, the housing **120** can comprise 16-gauge steel. Just as the general configuration of the housing **120** can vary, so too can the size of the housing **120**. In one example implementation, the housing **120** has a length of about fourteen inches, a width of about three inches, and a height of about six inches. As can be understood, the size of the housing **120** can vary from one implementation to the next by varying the sizes of the sidewalls **190a**, **190b**, **190c**, **190d**, and the back wall **190e**. Thus, depending on the number of connections required or the size of the network cables connecting to or within the service cable box **100**, the housing **120** can have an appropriate size to accommodate such network cables. Therefore the length, width, height, and the combination thereof of the service cable box **100** can be larger or smaller than the above dimensions.

In any event, the housing **120** can include multiple connection chambers, such as the service connection chamber **110a**. In at least one implementation, the housing **120** also includes a secondary connection chamber **110b**. The secondary connection chamber **110b** can accept and physically secure sec-

ondary network cables **200**, which can enter the secondary connection chamber **110b** through an entry port **310**. Furthermore, as described above, the barrier plate **140** can at least partially restrict access to the secondary network cables **200** by restricting access to the one secondary connection chamber **110b**.

In light of this disclosure, those skilled in the art should appreciate that the service connection chamber **110a** and the secondary connection chamber **110b** can have various shapes, sizes, and configurations. For example, the service connection chamber **110a** and the secondary connection chamber **110b** can be substantially the same size and/or shape, which may be a substantially rectangular shape. The service connection chamber **110a** and/or secondary connection chamber **110b**, however, can also have other configurations, which may in part depend on the sizes and shapes of the sidewalls **190a**, **190b**, **190c**, **190d** of the housing **120**.

Additionally, a divider can separate a larger chamber into the service connection chamber **110a** and the secondary connection chamber **110b**. In particular, in one or more implementations, the connector module **130** divides a larger chamber and separates the service connection chamber **110a** from the secondary connection chamber **110b**. Accordingly, the sizes and/or shapes of the service connection chamber **110a** and secondary connection chamber **110b** may depend on the location as well as on the orientation of the connector module **130**. For example, the connector module **130** may be oriented at a substantially 90° angle with respect to the back wall **190e**, thereby forming substantially rectangular service connection chamber **110a** and secondary connection chamber **110b** (when the sidewalls **190a**, **190b**, **190c**, **190d** are positioned at 90° angles with respect to one another). Alternatively, the connector module **130** can form other angles (i.e., acute and obtuse angles) with respect to the back wall **190e**.

Additionally or alternatively, the service cable box **100** can include a connection chamber shield, which can further protect connection chambers (located in the housing **120**) from unauthorized access. For example, in at least one implementation the service cable box **100** includes a secondary connection chamber shield **210** that covers and protects the secondary connection chamber **110b**. The shield **210** can include sidewalls **212a**, **212b**, and a mounting tab **214**, which can couple the shield **210** to the housing **120**. In addition to further protection from unauthorized access, the sidewalls **212a**, **212b** also can reduce and/or eliminate electromagnetic interference from network cables located in other (e.g., adjacent) connection chamber as well as network cables located outside of the service cable box **100**. The shield **210** also can include one or more perforations **216**, which can allow the secondary network cables **200** to pass through the sidewalls **212b** and connect to the connector module **130**.

Similarly, the housing **120** also can include an entry point, which can allow the secondary network cables **200** to pass into the secondary connection chamber **110b**. For instance, the housing **120** can incorporate the entry port **310**, which can include an opening that allows the secondary network cables **200** to pass into the housing **120** and into the secondary connection chamber **110b**. Additionally, the entry port **310** can include a clamp, which can secure the secondary network cables **200** at the entry port **310**, thereby preventing potential damage to the secondary network cables **200**.

In light of this disclosure, those skilled in the art should appreciate that the service cable box **100** can incorporate multiple entry ports (e.g., similar to the entry port **310**) which can allow secondary network cables **200** to pass into one or more secondary connection chambers. For example, the secondary connection chamber **110b** can have two or more entry

ports. Additionally or alternatively, the service cable box **100** can have multiple secondary connection chambers (similar to the secondary connection chamber **110b**), each of which can include at least one entry port.

As described above, the service cable box **100** can include a door **150**, which can allow and block access to the service connection chamber **110a**. In other words, the door **150** can seal and unseal the service connection chamber **110a**, thereby preventing or allowing access thereto. More specifically the door **150** can slide with respect to the barrier plate **140** thereby allowing access to the service connection chamber **110a** through the opening **142**. In one or more implementations, the housing **120** includes housing slots **230a**, **230b** that can accept corresponding portions of the door **150**. For example the door **150** can include tabs **240a**, **240b**, which can fit into the corresponding housing slots **230a**, **230b**, thereby securing the door **150** to the housing **120**.

The tabs **240a**, **240b** can have a substantially parallel orientation with a face of the door **150**. Furthermore, the door **150** can include retaining tabs **242a**, **242b** connecting the tabs **240a**, **240b** to the door **150**. The retaining tabs **242a**, **242b** can have a substantially perpendicular orientation with respect to the door **150**. Furthermore, the retaining tabs **242a**, **242b** can support the door **150** on one or more sidewalls **190a**, **190c** and/or on one or more housing slots **230a**, **230b**. Accordingly, the door **150** can remain suspended with respect to the housing **120**, by resting on the retaining tabs **242a**, **242b**.

As noted above, the housing **120**, service connection chamber **110a**, secondary connection chamber **110b**, and/or connector module **130** can be recessed within the wall **180** (see FIG. 1A). In at least one implementation, the housing **120** includes two flanges **250a**, **250b**. The flanges **250a**, **250b** have various holes or perforations, such as holes **252a**, **252b** in the flange **250a**. The installer can fasten the service cable box **100** to a portion of the wall (e.g., to a support beam or a stud), by fastening the flanges **250a**, **250b** to such portions of the wall.

As will be appreciated by those skilled in the art, similar to the housing **120**, the flanges also can comprise steel, aluminum, plastic (e.g., reinforced plastic) or other suitable material. Furthermore, it should be appreciated that the housing **120** can incorporate more or fewer than two flanges (such as the flanges **250a**, **250b**). Moreover, the flanges that can secure the service cable box **100** to the wall can have various shapes and sizes.

In at least one other implementation, the service cable box **100** can have other portions that can couple or fasten to the wall or portions thereof. For instance, the back wall **190e** of the housing **120** can have various holes or perforations that can accept fasteners to secure the service cable box **100** within the wall, such as holes **252c**, **252d**. It should be noted that the back wall **190e** can have fewer or more than two holes in the back wall **190e**, and such holes can accept various types and sizes of fasteners, which can secure the service cable box **100** within the wall.

As described above, in one implementation, the service cable box **100** also includes a face plate **170**, which can cover and/or conceal the edges of the opening in the wall that accepts the service cable box **100**. For example, the face plate **170** can have tabs **260a**, **260b** that can snap into corresponding openings in the housing **120** (and particularly in the flanges **250a**, **250b**), thereby securing the face plate **170** to the housing **120**. The manufacturer may choose various suitable materials for the face plate **170**, such as steel, aluminum, or plastic.

Moreover, face plate **170** also can have various shapes and contours. In the implementation illustrated in FIGS. 1A and 1B, the face plate **170** has a substantially rectangular shape

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and multiple beveled faces **265a**, **265b**, **265c**, **265d**. The face plate **170**, however, can have other shapes and face contours (e.g., rounded face contours). Moreover, the shape and size can be sufficient to cover the edges of the opening in the wall; however, the shape and size of the face plate **170** can be different from the shape of the housing **120**.

One skilled in the art should appreciate that, in one or more implementations, the service cable box **100** may have no face plate **170**. Additionally or alternatively, in at least one other implementation, the service cable box **100** can include the barrier plate **140** that extends beyond the edges of the housing **120**. Such barrier plate **140** can cover the edges of the opening in the wall (that accommodates the service cable box **100**).

As described above, in one or more implementations, the barrier plate **140** is secured to the housing **120** in a non-movable manner, such that the user accessing the service connection chamber **110a** cannot access the secondary connection chamber **110b**. In alternative implementations, however, as illustrated FIG. 1C, a service cable box **100a** includes a barrier plate **140a** that can allow the user to access the secondary connection chamber **110b**. For example, the barrier plate **140a** can swing open, thereby exposing the secondary connection chamber **110b**. Accordingly, the user can connect and/or disconnect secondary network cables within the secondary connection chamber **110b**.

For instance, a hinge assembly **270** can rotatably couple the barrier plate **140a** to the housing **120**. The hinge assembly **270** can comprise a pin (or multiple pins) that fit through an opening at or near the edge of the barrier plate **140a**. Alternatively, the hinge assembly **270** can incorporate additional elements, which have one or more openings for accepting the pins, and which connect to the barrier plate **140a**. Moreover, openings that can accept pins may be located within the housing **120** and may accept pin-like protrusions extending from the barrier plate **140a**. In yet one or more other implementations, both the housing **120** and the barrier plate **140a** can have openings that accept a pin (or multiple pins), which form the hinge assembly **270** that secures the barrier plate **140a** to the housing **120**. In light of this disclosure, those skilled in the art should appreciate that the hinge assembly **270** can have other configurations that can secure the barrier plate **140a** to the housing **120**.

In some instances, the user may desire to access only the service connection chamber **110a**, to connect and/or disconnect service network cables therein. Accordingly, similar to the service cable box **100** (see FIGS. 1A and 1B), the service cable box **100a** also includes a door **150a**. In particular, the door **150a** can slide into an open and closed positions, thereby providing and blocking access to the service connection chamber **110a**. For example, the door **150a** can couple to the barrier plate **140a** and can slide within the door slots **230c**, **230d** into an open and closed positions. Particularly, when the door **150a** is in the open position, the user can access the service connection chamber **110a** through an opening **142a** in the barrier plate **140a**.

As noted above, the service cable box **100a** can secure secondary network cables and/or service network cables and can restrict access thereto as well as to the network connectors. Thus, in at least one implementation, the service cable box **100a** includes a lockable barrier plate **140a**. Accordingly the barrier plate **140a** can swing into a closed position, where the lock **160** can secure the barrier plate **140a** and prevent the barrier plate **140a** from opening (i.e., from swinging into the open position).

For example, as mentioned above, the door **150a** can couple to the barrier plate **140a** and can slide within the door slots **230c**, **230d**. When the door **150a** moves into the closed

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position, the door **150a** can enter a locking slot **280**, which can be secured to or incorporated into the housing **120**. When the user moves the door **150a** into the locking slot **280**, the door **150a** may lock the barrier plate **140a**, securing the barrier plate **140a** to the housing **120**. In other words, the locking slot **280** will hold the door **150a**, and the door **150a** will hold the barrier plate **140a** (through the door slots **230c**, **230d**).

In alternative implementations, however, the door **150a** can couple to the housing **120** (such as within housing slots **230a**, **230b** described above in connection with FIGS. 1A and 1B). In such implementations, the barrier plate **140a** can incorporate the locking slot (such as the locking slot **280**). Hence, the door **150a** can slide along the housing slots and into the locking slot located on or incorporated into the barrier plate **140a**, thereby locking the barrier plate **140a** to the housing **120**.

For further security, the lock **160** can lock the door **150a**. Particularly, when the user turns the lock **160**, a hook **290** enters the slotted tab **156**, thereby securing the door **150a** in the closed position and preventing the door **150a** from sliding within the door slots **230c**, **230d**. Hence, when the door **150a** is in the closed position and locked by the lock **160**, as mentioned above, the barrier plate **140a** is also secured and locked to the housing **120** in the closed position.

In at least one implementation, substantially the entire door **150a** can fit into the locking slot **280**. Similarly, the entire door **150a** can fit within the door slots **230c**, **230d**. Accordingly, the locking slot **280**, the door slots **230c**, **230d**, and the door **150a** can provide substantial resistance to opening the barrier plate **140a**, when the door **150a** is in the closed position. Thus, such configuration can improve temper resistance of the barrier plate **140a**.

The service cable box **100**, **100a** described in connection with FIGS. 1B and 1C has a single service connection chamber **110a** and a single secondary connection chamber **110b**. It is to be appreciated that this invention is not so limited. For example, as illustrated in FIG. 2, a service cable box **100b** has multiple secondary connection chambers and multiple corresponding service connection chambers. In particular, the service cable box **100b** includes a first service connection chamber **110c** and a second service connection chamber **110d**. The service cable box **100b** also includes a first secondary connection chamber **110e** and a second secondary connection chamber **110f**.

The first and second service connection chambers **110c**, **110d** as well as the first and second secondary connection chambers **110e**, **110f** are located within a housing **120b**. The housing **120b** can have the shape and dimensions described above in connection with the housing **120** (FIGS. 1A-1B). Similarly, one or more sidewalls of the housing **120b** can define and/or form the first and second service connection chambers **110c**, **110d** as well as the first and second secondary connection chambers **110e**, **110f**.

Additionally, a connector module (similar to the connector module **130** described above (see FIG. 1B)) also can define (at least in part) one or more of the connection chambers. For example, a connector module **130a** can define or separate the first service connection chamber **110c** from the first secondary connection chamber **110e**. Similarly, a connector module **130b** can define or separate the second service connection chamber **110d** from the second secondary connection chamber **110f**.

In one or more implementations, the service cable box **100b** has at least one barrier, such as a barrier **300a**. The barrier **300a** can in part define the first and/or second service connection chambers **110c**, **110d**. Moreover, the barrier **300a**

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can prevent the user accessing one service connection chamber from accessing an adjacent connection chamber. For example, the barrier **300a** can prevent the user accessing the first service connection chamber **110c** from accessing the second service connection chamber **110d**. In one implementation, the barriers **300a**, **300b** are made from a strong metal and are permanently attached to the housing **120** (e.g., welded to the housing).

Also, more than one barrier can separate the first service connection chamber **110c** and the second service connection chamber **110d**. For instance, the service cable box **100b** can include a second barrier **300b**, which can be adjacent to the barrier **300a**. Furthermore, in at least one implementation, the barriers **300a**, **300b** include a space therebetween. Additional barriers can provide further separation between the service connection chambers, and can increase temper resistance of the service cable box **100b**. In other words, multiple barriers can have a greater efficacy in preventing an unauthorized user from gaining access from one of the service connection chambers into the adjacent connection chamber.

As noted above, the service connection chambers (such as the first and the second service network connection chambers **110c**, **110d**) can accept service network cables that connect users' devices to the networks. Similarly, the first and second secondary connection chambers **110e**, **110f** can accept and secure secondary network cables (e.g., secondary network cables **200a**, **200b**). In at least one implementation, the secondary network cables **200a**, **200b** can connect distinct networks to the service cable box **100b**. In other words, the secondary network cable **200a** can connect a first network and the secondary network cable **200b** can connect a second network to the service cable box **100b**.

Additionally or alternatively, the secondary network cables **200a**, **200b** can connect distinct sets of networks, and each set of networks can have distinct characteristics or attributes. Such characteristics or attributes can include network classification, network type (e.g., data network, telephone network, electrical, network, etc.), location of the network components, and other characteristics common to a set of networks. For example, the secondary network cable **200a** can connect a single or multiple networks of a first security classification to the service cable box **100b**. Comparably, the secondary network cable **200b** can connect one or more networks of a second security classification to service cable box **100b**.

In one or more implementations, the service cable box **100b** has a barrier plate **140b** that can cover the first secondary connection chamber **110e** and second secondary connection chamber **110f**. Particularly, at least a portion of the barrier plate **140b** can cover and protect the secondary network cables **200a** (located in the first secondary connection chamber **110e**) from unauthorized access. Similarly, another portion of the barrier plate **140b** can cover and protect the secondary network cables **200b** (located in the second secondary connection chamber **110f**) from unauthorized access.

For additional security and/or separation of the secondary network cables **200a**, **200b**, the housing **120b** of the service cable box **100b** can have corresponding dedicated entry ports **310a**, **310b**. Each of the entry ports **310a**, **310b** can allow entry of the secondary network cables **200a**, **200b** (respectively) to one specific chamber. In particular, the entry port **310a** can allow the secondary network cables **200a** to enter the first secondary connection chamber **110e**. Similarly, the entry port **310b** can allow the secondary network cables **200b** to enter the first secondary connection chamber **110f**.

Thus, the secondary network cables **200a**, **200b** that enter the service cable box **100b** can be segregated and secured based on type and/or security classification. In one implemen-

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tation, the service cable box **100b** can include secure dedicated entry ports (e.g., entry ports **310a**, **310b**) that connect to a secure secondary connection chamber, as well as non-secure dedicated entry ports that connect to non-secure secondary connection chambers. In other words, as described above and further described below, a secure chamber can have restricted access thereto, which may depend on the user's security clearance. In one example implementation, every secondary connection chamber can be a secure connection chamber (which can include different levels of security classifications, e.g., Secret and Top Secret). In an alternative implementation, one or more secondary connection chambers are secure chambers, while the remaining secondary connection chambers are non-secure.

The housing **120b** can include both the non-secure and the secure dedicated entry ports **310a**, **310b** (as the case may be), such that each secondary network cable or sets of cables can enter on the same side of the housing **120b**. In alternative implementations, the various entry ports **310a**, **310b** can be positioned on various sides of the housing **120b** providing the service box service cable box **100** with the ability to accept cables from various directions without having to bend or twist the cables.

Position of the entry ports **310a**, **310b** also can provide additional physical security functions. In particular, locations and/or positions of the entry ports **310a**, **310b** on the housing **120b** can be configured such that the entry ports **310a** and/or **310b** only can be accessed if the service box service cable box **100b** is removed from the mounting location within the ceiling, floor, or wall. As noted above, for additional security, mounting screws and/or other mounting components, secure the service cable box **100b** to a support structure in the wall from within the connection chambers. Thus, an unauthorized user may not be able to remove the service cable box **100b** from the wall (for instance, to access the entry ports **310a**, **310b**), since the user may have to access the secured connection chambers, which may require a key (as described above).

To restrict access to the secondary connection chambers (e.g., to the first and second secondary connection chambers **110e**, **110f**), the service cable box **100b** includes a barrier plate **140b**. Similar to the barrier plate **140**, **140a**, as described above in connection with FIGS. 1A-1B, the barrier plate **140b** can permanently or semi-permanently couple to the housing **120b**. In other words, the barrier plate **140b** may be immovably coupled to the housing **120b**. Alternatively, similar to the barrier plate **140a** (FIG. 1C), the barrier plate **140b** can include a hinge assembly that can allow the barrier plate **140b** to swing into open and closed positions (providing and blocking access to the connection chambers).

Additionally, in at least one implementation, the barrier plate **140b** can include two openings (i.e., openings **142b**, **142c**) that can provide access through the barrier plate **140b** into the first service connection chamber **110c** and second service connection chamber **110d**, respectively. In other words, the user can access each of the first and second service connection chambers **110c**, **110d** through an individual opening that corresponds with the particular service connection chamber. In one or more other implementations, however, the service cable box **100b** can include the barrier plate **140b** with a single opening that can provide access to both the first and the second connection chambers **110c**, **110d**.

In one or more implementations, the service cable box **100b** also has two doors **150b**, **150c**, which can cover the openings **142b**, **142c**, respectively. The doors **150b**, **150c** can fit into the housing slots **230e**, **230f**, in a similar manner as described above in connection with FIG. 1A-1C. Particularly, the housing slots can couple to the housing **120** (see housing

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230a, 230b, FIG. 1B), and, therefore, the doors 150b, 150c also can be secured to the housing 120, directly through the housing slots. Alternatively, the housing slots can couple to the barrier plate 140b, similar to the door slots 232c, 232d (see FIG. 1C). Thus, the doors 150b, 150c can couple to the barrier plate 140b, and the barrier plate 140b can couple to the housing 120. Furthermore, the doors 150b, 150c can have substantially the same configuration as the door 150 (FIG. 1B).

As described above, the doors 150b, 150c can slide along the housing slots into an open or closed position. In the closed position, the door 150b prevents access to the first service connection chamber 110c. Similarly, in the closed position, the door 150c prevents access to the second service connection chamber 110d. Conversely, when the doors 150b, 150c are in the open position, the user can access the first and second service connection chambers 110c, 110d.

The service cable box 100b also can include locks 160a, 160b, which can respectively lock the doors 150b, 150c in the closed positions. The locks 160a, 160b also may require different keys (e.g., physical keys) for opening and closing thereof. Accordingly, the service cable box 100b can selectively restrict access to network connectors contained within the service cable box 100b.

As noted above, the first service connection chamber 110c and the second service connection chamber 110d can provide network connectors connected to networks or network sets having different characteristics, such as security classifications. Accordingly, a first lock (e.g., lock 160a) can restrict access to the first service connection chamber 110c, which can house service connections to network(s) having the first security classification. Similarly, a second lock (e.g., lock 160b) can restrict access to the second service connection chamber 110d, which can house service connections to network(s) having the second security classification. Accordingly, for example, a network administrator can provide the keys (i.e., access) to selected users, who are authorized to access the respective service connection to the first and/or second security classification networks.

Hence, the service cable box 100b can provide restricted and secure access to two networks or sets of networks housed within the service cable box 100b. In light of this disclosure, however, it should be apparent to those skilled in the art that this invention is not so limited. Particularly, in at least one implementation, the service cable box can have any number of secondary and corresponding service connection chambers, which can house network cables of any number of security classifications. For example, the service cable box can include three or more service connection chambers, which the user can access through corresponding one or more openings in the barrier plate. Similarly, the service cable box also can include three or more doors that can cover the opening(s) in the barrier plate, and which can selectively provide access to respective service connection chambers.

In one or more implementations, the service cable box 100b also can include a face plate 170b that can conceal edges of the opening in the wall that accepts the housing 120. The face plate 170b can provide an aesthetically pleasing appearance to the service cable box 100b. Additionally or alternatively, the barrier plate 140b can extend past the housing 120 and can cover the edges of the opening in the wall, which accepts the housing 120 of the service cable box 100b.

As alluded to above, in still other implementations, the service cable box can provide access to service connections unprotected by the door (or by a lock). Moreover, the service cable box can house networks of different types, such as communication network and electrical network. For

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example, as illustrated in FIGS. 3A-3B, a service cable box 100c can have multiple connection chambers that can house network cables of different types and security classifications.

In particular, the service cable box 100c has entry ports 310c, 310d that accept secondary network cables 200c, 200d from data and/or telecommunication networks. Furthermore, the secondary network cable 200c, 200d can have different security classifications. For instance, the secondary network cable 200c can have a first security classification (e.g., top secret) and the secondary network cable 200d can have a second security classification, unclassified. Accordingly, the service cable box 100c includes secure and unsecure connection chambers (described below), which can accept the respective secondary network cables 200c, 200d.

Additionally, the service cable box 100c has entry ports that accept secondary network cables from an electrical network. Particularly, the service cable box 100c has entry ports 310e, 310f that can respectively accept secondary network cables 200e, 200f from respective first and second electrical networks. In one or more implementations, the first and second electrical networks can have different voltage (e.g., the first electrical network can have 110V and the second electrical network can have 220V). Alternatively, the first and second electrical networks can have different phases. In still further implementations, the secondary network cables 200e, 200f are both feed from the same electrical network or power grid.

In at least one implementation, the service cable box 100c includes a housing 120a that houses various secure and unsecure connection chambers (including primary and secondary connection chambers). More specifically, the housing 120a of the service cable box 100c includes secondary connection chambers 110g, 110h, 110i, 110j, as shown in FIG. 3B. The secondary connection chambers 110g, 110h accept and secure data/communication secondary network cables 200c, 200d, respectively. The secondary connection chambers 110i, 110j accept and secure respective electrical secondary network cables 200e, 200f. The secondary network cables 200c, 200d, 200e, 200f, secured within respective secondary connection chambers 110g, 110h, 110i, 110j, can further connect to respective connector modules 130c, 130d, 130e, 130f.

Additionally, the service cable box 100c has a service connection chamber 110k, which can be a secure connection chamber. In particular, the connector module 130c can separate the secondary connection chamber 110g from the service connection chamber 110k. Furthermore, the connector module 130c can include service network connectors 132c. Notably, the secondary connection chamber 110g, service connection chamber 110k and the connector module 130c can have substantially the same configuration as the service connection chamber 110a, secondary connection chamber 110b, and the connector module 130 described above (see FIG. 1B).

In at least one implementation, the service cable box 100c includes the barrier plate 140 that covers and/or seals the secondary connection chamber 110g. The barrier plate 140 also has the opening 142, which provides access to the service connection chamber 110k and, consequently, to the connector module 130c. As described above, in one or more implementations, the service connection chamber 110k and/or the secondary connection chamber 110g can be secure chambers. Thus, the barrier plate 140 can securely couple to the housing 120, such that an unauthorized user may not gain access to the secondary connection chamber 110g. Additionally, similar to the other service boxes described above, the service cable box 100c can include a

Furthermore, the service cable box 100c can include the door 150, which can restrict access to the service connection

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chamber **110k** (i.e., making the service connection chamber **110k** a secure chamber). Particularly, as described above, the door **150** can slide into the closed position, where the user or the network administrator can lock the door **150** with the lock **160**, thereby restricting access to the service connection chamber. Authorized personnel (users that have the key to the lock **160**) can slide the door **150** into the open position, thereby accessing the service connection chamber **110k** through the opening **142**.

As described above, the service cable box **100c** can include additional chambers, which may be unsecure. Such additional chambers may be separated one from another by barriers. For instance, the secondary connection chamber **110h** (which is unsecure) may be separated from the secure service connection chamber **110k** by barriers **300c**, **300d**. Multiple barriers that separate one connection chamber from another can provide additional security by further blocking access from one connection chamber into another. Similarly, secondary connection chambers **110h**, **100i**, **110j** are separated one from another by barriers **300e**, **300f**.

In one or more implementations, the service cable box **100c** can include sub-housings **122a**, **122b**. Such sub-housings **122a**, **122b** can provide further separation and security to network cables and network connectors located therein. For instance, the sub-housing **122a** can form the secondary connection chamber **110g** and the service connection chamber **110k**, while the sub-housing **122b** can form the remaining secondary connection chambers **110h**, **110i**, **110j**. Thus, respective sidewalls of the sub-housings **122a**, **122b** also can form the barriers **300c**, **300d**, which separate the service connection chamber **110k** from the secondary connection chamber **110h**.

Furthermore, the sub-housing **122a** can be separated one from another, which also can form separated barriers **300c**, **300d**, described above. Such separation can provide additional security to secure connection chambers and may reduce or eliminate electromagnetic field interference. Similarly, the sub-housings **122a**, **122b** can have a separation from the housing **120a**, forming a space **125**. For instance, the space **125** can house network cables.

In at least one implementation, the secondary network cables **200d** can connect an unsecure network to a connector module **130d**. Connector module **130d** can comprise multiple network connectors **132d** that can accept data/communications service network cables or cable connectors or jacks (e.g., network connectors **132** can be data network outlets). Moreover, the connector module **130d** can have a substantially parallel orientation with the wall when the service cable box **100c** is installed.

Additionally or alternatively, the service cable box **100c** can include electrical secondary network cables **200e**, **200f** that connect to connector modules **130e**, **130f**, respectively. Connector modules **130e**, **130f** include respective network connectors **132e**, **132f** (i.e., power outlets that can accept electrical plugs). Such network connectors **132e**, **132f** can have a desired configuration, for example, based on the voltage of the electrical secondary network cables **200e**, **200f**.

In at least one implementation, the service cable box can accept secondary network cables that may have a minimum radius requirement—i.e., secondary network cables that may break or malfunction if bent beyond a certain minimum radius. To accommodate such secondary network cables (e.g., fiber optic cables) the service cable box can include an additional enclosure. For instance, as illustrated in FIGS. **4A-4B**, a service cable box **100d** can include an expander box **310** connected to a housing **120b**.

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The expander box **310** can have any suitable shape that can accommodate a minimum radius looping of a secondary network cable **200g**. For example, the expander box **310** can have a substantially rectangular configuration, with front and back plates **312a**, **312b** and four sidewalls **312c**, **312d**, **312e**, **312f**. The sidewall **312d** can include an entry port **310g**, which can accept the secondary network cable **200g**. The sidewall **312f** can have an exit port that can allow the secondary network cable **200e** to pass into the housing **120b** (and more specifically into the secondary connection chamber within the housing **120b**).

In one or more implementations, the installer can remove the front plate **312a** to access the interior space of the expander box **310**. Hence, the installer can route the secondary network cable **200g** into a loop **202g** (having at least a minimum radius) by winding the secondary network cable **200g** onto pegs (such as pegs **320a**, **320b**, **320c**, **320d**). The installer can form a single loop **202g** or multiple loops of similar radius. Although, the illustrated implementations of the service cable box **100d** includes four pegs **320a**, **320b**, **320c**, **320d**, this invention is not so limited. Hence, the expander box **310** can include fewer or more pegs, about which the installer can wind the secondary network cable **200g**.

After winding the secondary network cable **200g** onto the pegs **320a-320c**, the installer can secure the front plate **312a**. For instance, the installer can use fasteners to fasten the front plate **312a** to one or more sidewalls **312c-312f**, or portions thereof. Additionally or alternatively, the installer can weld, solder, or press fit the front plate to or within one or more of the sidewalls **312c-312e**.

After securing the secondary network cable within the expander box **310**, the installer can complete installation of the service cable box **100c** within the wall, as described above. In light of this disclosure, those skilled in the art should appreciate that expander box **310** can mount on any housing **120** of any of the implementations of the service cable box **100**, **100a**, **100b** (FIGS. **1A-3B**). Furthermore, the expander box **310** can provide expansion of secondary network cables that may enter secure or unsecure chambers of the service cable box.

The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes that come within the meaning and range of equivalency of the claims are to be embraced within their scope.

We claim:

1. A recessed service cable box for securing a plurality of network cables and for providing access to a plurality of securable network connections based at least in part on security clearance to access a particular security classification network, the service cable box comprising:

- a housing;
- a first connection chamber located within the housing;
- a second connection chamber located within the housing;
- a connector module separating the first connection chamber from the first second connection chamber;
- a barrier plate coupled to the housing, the barrier plate having an opening, and the barrier plate being sized and configured to at least partially cover the first connection chamber and to prevent access thereto;
- a door coupled to one or more of the housing and the barrier plate, the door being configured to slide open and further

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configured to selectively provide access to the second connection chamber through the opening in the front barrier plate; and

a lock configured to selectively lock the door relative to the barrier plate.

2. The service cable box as recited in claim 1, wherein: the first connection chamber is configured to secure service network cables of a first network having a first security classification; and

the second connection chamber is configured to secure secondary network cables having the first security classification.

3. The service cable box as recited in claim 2, further comprising:

a third connection chamber that is a second service connection chamber configured to secure service network cables of a second network having a second security classification; and

a fourth connection chamber that is a second secondary connection chamber configured to secure service network cables having the second security classification.

4. The service cable box as recited in claim 2, further comprising:

a third connection chamber configured to secure secondary network cables of a second network; and

a second connector module covering the third connection chamber.

5. The service cable box as recited in claim 4, wherein: the first network is a data or communication network; the second network is an electrical network; and the second connector module contains power outlets.

6. The service cable box as recited in claim 1, wherein the front barrier plate is fixedly coupled to the housing.

7. The service cable box as recited in claim 1, wherein the front barrier plate is rotatably coupled to the housing.

8. The service cable box as recited in claim 7, further comprising a locking slot coupled to the front barrier plate, the locking slot being configured to accept a portion of the door and prevent the barrier plate from rotating with respect to the housing.

9. A service cable box for housing a plurality of network cables and for accepting network cables to connect to one or more network connections while maintaining connections within the service cable box, the service cable box comprising:

a housing configured to be mounted within a wall;

a connection chamber disposed within the housing, the connection chamber being configured to physically secure secondary network cables;

a front barrier plate or a face plate coupled to the housing, the front barrier plate or the face plate having at least one opening, wherein the front barrier plate or the face plate is configured to extend substantially parallel to the wall;

a connector module located in the connection chamber;

a door coupled to one or more of the housing and the barrier plate or the face plate, the door being configured to slide open and selectively provide access to at least a portion of the connection chamber through the opening in the front barrier plate or the face plate;

a lock configured to selectively lock the door relative to the barrier plate or the face plate;

a first service connection chamber configured to secure service network cables of a first network having a first security classification; and

a first secondary connection chamber configured to secure secondary network cables having the first security clas-

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sification, wherein the connector module separates the first service connection chamber from the first secondary connection chamber;

wherein:

one or more of the front barrier plate or the face plate is configured to abut the wall when the service cable box is installed;

the connector module has a non-parallel orientation with respect to one or more of the front barrier plate or the face plate; and

the connector module is configured to be recessed within the wall.

10. The service cable box as recited in claim 9, further comprising:

a third connection chamber that is a second service connection chamber configured to secure service network cables of a second network having a second security classification; and

a fourth connection chamber that is a second secondary connection chamber configured to secure service network cables having the second security classification.

11. The service cable box as recited in claim 9, further comprising:

a third connection chamber configured to secure secondary network cables of a second network; and

a second connector module covering the third connection chamber.

12. The service cable box as recited in claim 11, wherein: the first network is a data or communication network; the second network is an electrical network; and the second connector module contains power outlets.

13. The service cable box as recited in claim 9, wherein the front barrier plate or the face plate is fixedly coupled to the housing.

14. The service cable box as recited in claim 9, wherein the front barrier plate or the face plate is rotatably coupled to the housing.

15. The service cable box as recited in claim 9, further comprising a locking slot coupled to the front barrier plate or the face plate, the locking slot being configured to accept at least a portion of the door, thereby preventing the front barrier plate or the face plate from rotating with respect to the housing.

16. A secure network cable distribution system for securing network cables from networks of different types or security classifications, the system comprising:

one or more data or communication secondary network cables located in an interior space of one or more of a ceiling, a floor, or a wall;

an electrical secondary network cable located in the interior space of one or more of the ceiling, the floor, or the wall; and

a service cable box mounted within the interior space of one or more of the ceiling, the floor, or the wall; wherein the service cable box includes a plurality of connection chambers within a unitary housing, the plurality of connection chambers accepting and securing the one or more data or communication secondary network cables, and the electrical secondary network cable; and

a barrier plate configured to selectively restrict access to the plurality of connection chambers; and

one or more lockable doors in the service cable box, the one or more lockable doors configured to open or close a corresponding opening of the barrier plate, and to selectively seal one or more connection chambers of the plurality of connection chambers within the service cable box.

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17. The system as recited in claim 16, wherein one or more data or communications secondary network cables have a first security classification.

18. The system as recited in claim 17, further comprising one or more network connectors connected to the one or more data or communications secondary network cable of the first security classification, wherein the one or more lockable doors seals the one or more network connectors within the one or more connection chambers.

19. The system as recited in claim 18, wherein one or both of the unitary housing and the barrier plate further comprises a locking slot for selectively securing the barrier plate to the unitary housing with a lockable door that slides with respect to the barrier plate.

20. A service cable box for housing a plurality of network cables and for accepting network cables to connect to one or more network connections while maintaining connections within the service cable box, the service cable box comprising:

a housing configured to be mounted within a wall;
a connection chamber disposed within the housing, the connection chamber being configured to physically secure secondary network cables;

a front barrier plate coupled to the housing, the front barrier plate having at least one opening, wherein the front barrier plate is configured to extend substantially parallel to the wall;

a connector module located in the connection chamber; and

a locking slot coupled to the front barrier plate, the locking slot being configured to accept at least a portion of a door, thereby preventing the barrier plate from rotating with respect to the housing;

wherein:

one or more of the front barrier plate or a face plate is configured to abut the wall when the service cable box is installed;

the connector module has a non-parallel orientation with respect to one or more of the front barrier plate or the face plate;

the connector module is configured to be recessed within the wall; and

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the front barrier plate is rotatably coupled to the housing.

21. The service cable box as recited in claim 20, further comprising:

a door coupled to one or more of the housing and the barrier plate, the door being configured to slide open and selectively provide access to at least a portion of the connection chamber through the opening in the front barrier plate; and

a lock configured to selectively lock the door relative to the barrier plate.

22. The service cable box as recited in claim 21, wherein the connection chamber comprises:

a first service connection chamber configured to secure service network cables of a first network having a first security classification; and

a first secondary connection chamber configured to secure secondary network cables having the first security classification, wherein the connector module separates the first service connection chamber from the first secondary connection chamber.

23. The service cable box as recited in claim 22, further comprising:

a third connection chamber that is a second service connection chamber configured to secure service network cables of a second network having a second security classification; and

a fourth connection chamber that is a second secondary connection chamber configured to secure service network cables having the second security classification.

24. The service cable box as recited in claim 22, further comprising:

a third connection chamber configured to secure secondary network cables of a second network; and

a second connector module covering the third connection chamber.

25. The service cable box as recited in claim 24, wherein: the first network is a data or communication network; the second network is an electrical network; and the second connector module contains power outlets.

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